

REMARKS

This Amendment is filed in connection with the filing of an RCE herewith, and in response to the final Office Action dated April 29, 2008, and is respectfully submitted to be fully responsive to the rejections raised therein. Accordingly, favorable reconsideration on the merits and allowance are respectfully requested.

In the present Amendment, the specification has been amended to correct a typographical error.

Claim 1 has been amended to incorporate an additional feature, which recites that the hollow part is located within the high intrinsic viscosity polytrimethylene terephthalate resin part of each hollow composite staple fiber. Claim 1 has also been amended to recite that the composite fiber is a hollow composite staple fiber. Support for amended claim 1 can be found, e.g., in the specification on page 10, line 7; in Figs. 1, 3 and 4; and in original claim 2.

Claim 2 has been canceled.

Claim 4 has been canceled.

Claims 5 and 6 have been newly added. Support for these claims can be found in the specification, for example, at page 10, lines 10-20 and 31-34.

No new matter has been added. Entry of the Amendment is respectfully submitted to be proper. Upon entry of the Amendment, claims 1 and 3-6 will be all the claims pending in the application.

I. Response to Rejection Under 35 U.S.C. § 103(a)

Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 32003/0094019 (“Miyake”) in view of U.S. Patent 6,455,156 (“Tanaka”). Particularly, the Office Action asserted that Miyake teaches a composite fiber formed, by compositing in a side-by-side manner, two types of poly(trimethylene terephthalates) having a difference in intrinsic viscosity from 0.05-0.3 dl/g. According to the Examiner, Miyake further teaches that the cross-section of the fiber can be hollow, and since the hollow portion is provided within the cross-section, it would assertedly be present along the longitudinal axis of the fiber.

Furthermore, it was asserted that, since Miyake teaches that a side-by-side fiber may have a hollow portion within its cross-section, the hollow part would be located within one of the two side-by-side components or in-between both components. The Office Action conceded that Miyake fails to specifically teach the use of hollow fibers having a cross-sectional area corresponding to 2-15% of the total cross-sectional area of the composite fiber. However, per the Examiner, Tanaka cures the deficiency because Tanaka teaches that the hollow portions constitute 2-65% of the fiber cross-section. Thus, the Office Action took the position that it would have been obvious to one of ordinary skill in the art to create the fiber of Miyake with a hollow portion constituting 2-15% of the cross-sectional area, as allegedly being suggested by Tanaka.

Applicant traverses and respectfully requests reconsideration of the rejection in view of the amendments to the claims and in further view of the following remarks.

Claim 1 has been amended to recite feature (2), which recites that the hollow part is located within the high intrinsic viscosity polytrimethylene terephthalate resin part of each hollow composite staple fiber. Feature (2) of claim 1 is supported by original claim 2 and in the disclosure on page 10, lines 7-9. The feature is also supported in Fig. 1, in which a hollow part 4 is located within a larger side part 2 comprising a high intrinsic viscosity resin component in a side-by-side type hollow composite fiber; Fig. 3, in which a hollow part 4 is located within a core part 3 formed from a high intrinsic viscosity resin component eccentrically arranged in a sheath part 2 of an eccentric core-in-sheath type composite fiber 1; and Fig. 4, in which a hollow part 4 is located in a core part 3 formed from a high intrinsic viscosity resin component eccentrically arranged in a sheath part 2 of an eccentric core-in-sheath type composite fiber 1.

Applicants submit that feature (2) combined with features (1), (3) and (4), as recited in amended claim 1, enables the resultant hollow composite fibers to exhibit advantages such that when the latent crimping property of the resultant hollow composite fibers is actualized, the resultant crimps of the hollow composite fibers exhibit a large loop form. Thus the resultant hollow composite fibers exhibit excellent bulkiness and elastic recovery. Therefore, the polytrimethylene terephthalate hollow conjugate staple fibers of the present invention are useful for non-woven fabrics, woven or knitted fabric and cushioning materials.

Also, the combination of feature (2) with features (1), (3) and (4) enables the polytrimethylene terephthalate hollow conjugate fibers to be smoothly produced with an improved productivity and to exhibit an appropriately balanced percentage crimp and bulkiness.

The presently claimed invention, as recited in amended claim 1, is patentable over Miyake alone, or further in view of Tanaka. Miyake discloses a latent crimp composite fiber formed from two types of polytrimethylene terephthalate polymers having different intrinsic viscosities, in a side-by-side arrangement or in an eccentric core-in-sheath arrangement. Miyake at column 6, paragraph [0069], on the last line, discloses generally that the composite fiber may be hollow-shaped. However, Miyake does not provide any examples in which a hollow composite fiber is prepared. Furthermore, Miyake does not teach or suggest the location of the one hollow part in the side-by-side or eccentric core-in-sheath structure and the size of the hollow part. Thus, there is no guidance in the disclosure of Miyake that would lead one having ordinary skill in the art to pick a hollow composite fiber.

Miyake also fails to describe, teach or suggest feature (2) as recited in the amended claim 1 of the present application. Namely, Miyake fails to teach, suggest, motivate or provide other reason for an arrangement of one hollow within a part of the hollow composite fiber which part is formed from the high viscosity resin component.

Additionally, Miyake fails to teach, suggest, motivate or provide other reason for features (3) and (4), as recited in the amended claim 1 of the present application.

Thus, Miyake does not teach, suggest, motivate or provide other reason for the specific advantages of the present invention derived from the combination of features (2), (3) and (4) with feature (1), as recited in the amended claim 1.

Tanaka does not cure the deficiencies in Miyake. Tanaka discloses an islands-in-sea type composite fiber having, in a cross section thereof, a sea portion formed from a thermoplastic

polymer, such as a polyolefin or polyester fiber and 7 or more island portions formed from a water-soluble polymer (e.g., polyvinyl alcohol).

According to Tanaka, when the islands-in-sea type composite fiber is treated in hot water, the water-soluble polymer island portions are dissolved and removed and converted to 7 or more hollows. These resultant multi-hollowed fibers of Tanaka distinguishable over the hollow composite fiber of the present invention which has a side-by-side structure or a core-in-sheath structure and is provided with one hollow part.

Also, Tanaka also fails to teach, suggest, motivate or provide other reason for features (1), (2) and (4), as recited in the amended claim 1 of the present application, and the specific advantages of the present invention derived from the combination of features (1), (2) and (4) with features (3). Thus, Tanaka does cure the deficiencies of Miyake.

For the above-mentioned reasons, neither Miyake nor Tanaka teaches, suggests, motivates or provides other reason for features (2) and (4) as recited in amended claim 1. Particularly, neither Miyake nor Tanaka teaches or suggests the specific advantages of the hollow composite staple fiber of the present invention derived from combination of feature (2) with features (1), (3) and (4) of the present invention.

Therefore, the combination of Miyake in view of Tanaka does not render the presently claimed invention obviousness. Accordingly, withdrawal of the rejection is respectfully requested and submitted to be proper.

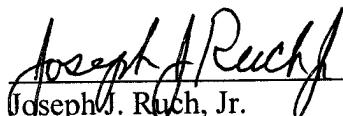
II. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local Washington, D.C. telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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23373
CUSTOMER NUMBER

Date: August 29, 2008